25

CLAIMS

1. A process for the preparation of a compound of Formula (1):

5

Formula (1)

wherein:

10

R^x is optionally substituted aryl; and R^y is optionally substituted hydrocarbyl: which comprises the steps:

(a) reducing a compound of Formula (2):

15

Formula (2)

20 to

to a compound of Formula (3):

25

Formula (3)

wherein R^x and R^y are as defined for Formula (1):

(b) reacting a compound of Formula (3) with a leaving group donor, to give a compound of Formula (4);

Formula (4)

35

wherein:

R^x and R^y are as defined for Formula (1); and OL is a leaving group:

- (c) reacting a compound of Formula (4) with ammonia to give a compound of Formula (1).
- 2. A process according to claim 1 for the preparation of a compound of Formula (5):

Formula (5)

wherein:

R¹ is a substituent;

R² is optionally substituted hydrocarbyl; and

n is 0 to 4:

which comprises the steps:

(a) reducing a compound of Formula (6):

15

5

10

Formula (6)

to a compound of Formula (7):

20

Formula (7)

wherein R^1 , R^2 and n are as defined for Formula (5):

25

30

(b) reacting a compound of Formula (7) with a leaving group donor, to give a compound of Formula (8);

Formula (8)

wherein:

R¹, R² and n are as defined for Formula (5); OL is a leaving group:

- 5 (c) reacting a compound of Formula (8) with ammonia to give a compound of Formula (5).
 - 3. A process according to claim 2 where R² is optionally substituted C₁₋₄alkyl.
 - 4. A process according to claim 3 where R² is methyl.
 - 5. A process according to any one of the preceding claims wherein n is 0.
 - 6. A process according to any one of the preceding claims where step (a) is carried out in the presence of a catalyst.
 - 7. A process according to claim 6 where the catalyst is of Formula (A):

A B

Formula (A)

20

25

30

35

10

15

wherein:

R³ represents a neutral optionally substituted hydrocarbyl, a neutral optionally substituted perhalogenated hydrocarbyl, or an optionally substituted cyclopentadienyl ligand;

A represents $-NR^4$ -, $-NR^5$ -, $-NHR^4$, $-NR^4R^5$ or $-NR^5R^6$ where R^4 is H, C(O) R^6 , SO_2R^6 , C(O) NR^6R^{10} , C(S) NR^6R^{10} , C(= NR^{10})SR¹¹ or C(= NR^{10})OR¹¹, R^5 and R^6 each independently represents an optionally substituted hydrocarbyl, perhalogenated hydrocarbyl or an optionally substituted heterocyclyl group, and R^{10} and R^{11} are each independently hydrogen or a group as defined for R^6 ;

B represents -O-, -OH, OR^7 , -S-, -SH, SR^7 , - NR^7 -, - NR^8 -, - NHR^8 , - NR^7R^8 , - NR^7R^9 , - PR^7 - or - PR^7R^9 where R^8 is H, $C(O)R^9$, SO_2R^9 , $C(O)NR^9R^{12}$, $C(S)NR^9R^{12}$, $C(=NR^{12})SR^{13}$ or $C(=NR^{12})OR^{13}$, R^7 and R^9 each independently represents an optionally substituted hydrocarbyl, perhalogenated hydrocarbyl or an optionally substituted heterocyclyl group, and R^{12} and R^{13} are each independently hydrogen or a group as defined for R^9 ;

E represents a linking group;

M represents a metal capable of catalysing transfer hydrogenation; and Y represents an anionic group, a basic ligand or a vacant site;

provided that when Y is not a vacant site that at least one of A or B carries a hydrogen atom.

- 8. A process according to claim 7 wherein A-E-B, R³ and Y are chosen so that the catalyst is chiral.
 - 9. A process according to either claim 7 or claim 8 wherein M, the metal, is rhodium present in valence state III and R³ is an optionally substituted cyclopentadienyl ligand.
- 10 10. A process according to any one of claims 7 to 9 where the catalyst of Formula (A) is of formula:

- 11. A process according to any one of the preceding claims wherein step (a) is a stereospecific reaction.
 - 12. A process according to any one of the preceding claims wherein the product of step (a) is a compound of Formula (9):

Formula (9)

wherein:

20

25

WO 2004/110976

R¹ is a substituent;

R² is optionally substituted hydrocarbyl; and n is 0 to 4.

13. A process according to any one of claims 1 to 5 where in step (b) the leaving group donor is a compound of formula $R^{14}SO_2X$, where R^{14} is an optionally substituted

alkyl, optionally substituted aryl or an optionally substituted heteroaryl group and X is a halogen.

- 14. A process according to claim 13 where in step (b) the leaving group donor is methanesulphonyl chloride.
 - 15. A process according to either claim 1 or claim 2 for the preparation of a compound of Formula (10):

10

Formula (10)

which comprises the steps:

15 (a) reducing a compound of Formula (11):

Formula (11)

20

to a compound of Formula (12):

Formula (12)

25

(b) reacting a compound of Formula (12) with a compound of formula R³SO₂X, in the presence of a base, to give a compound of Formula (13);

30

Formula (13)

wherein:

10

15

20

25

30

35

R³ is optionally substituted C₁₋₄alkyl; and X is halogen:

- 5 (c) reacting a compound of Formula (13) with ammonia to give a compound of Formula (10).
 - 16. A process according to claim 15 where step (a) is carried out in the presence of a catalyst of Formula (A) as described in claim 7.
 - 17. A process according to claim 15 wherein the compound of Formula (10) is purified by diastereomeric salt resolution using (L)-tartaric acid or (L)-chloropropionic acid.
 - 18. A process for the preparation of a stereoisomer of a compound of Formula (14):

R² OH (R¹)n

Formula (14)

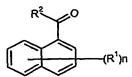
wherein:

R¹ is a substituent;

R² is optionally substituted hydrocarbyl; and

n is 0 to 4:

which comprises the transfer hydrogenation of a compound of Formula (6):



Formula (6)

by a hydrogen donor in the presence of a catalyst of Formula (A) as described in claim 7.

- 19. A process for the diastereomeric salt resolution of (S)-1-naphthylethylamine which comprises mixing (S)-1-naphthylethylamine with (2R,3R)-tartaric acid or (S)-chloropropionic acid to form the corresponding diastereomeric salt.
- 20. A diastereomeric salt of (S)-1-naphthylethylamine with (2R,3R)-tartaric acid or (S)-chloropropionic acid.

31

21. A compound of Formula (15):

Formula (15)

wherein:

5

10

R¹ is a substituent; R² is optionally substituted hydrocarbyl; and n is 0 to 4.

22. A compound according to claim 21 of Formula (15) which is of Formula (16):

15 Formula (16)